Project includes:

- 1) Constructing mechanically-stabilized earth (MSE) abutments
- 2) Installing a pre-manufactured 16' wide by 80' long bridge.

Plan Sheet Index:

C001 – General Project location and Notes.

C002 - Plan View and Centerline Section View.

C003 - Section Views.

Appendices:

- 1) Pre-manufactured bridge details and installation manual.
- 2) MSE wall installation manual.

GENERAL

A SUBSURFACE INVESTIGATION OR MATERIAL STRENGTH TESTS WERE NOT PERFORMED PRIOR TO THE DESIGN OF THE PROPOSED EAST BRANCH SOQUEL CREEK BRIDGE CROSSING (CROSSING #16). AS SUCH, CONSERVATIVE SOIL STRENGTH VALUES WERE ASSUMED IN THE DESIGN. THE PROJECT ENGINEER SHALL CONDUCT FIELD OBSERVATIONS AS THE SITE IS EXCAVATED TO CONFIRM THAT THE ASSUMED CONDITIONS ARE VALID. IF IT APPEARS THE OBSERVED CONDITIONS ARE SUBSTANTIALLY DIFFERENT THAN THOSE ASSUMED, THE PROJECT ENGINEER SHALL EXPEDITE A REVISED DESIGN.

CONTRACTOR'S SCOPE OF WORK:

THE CONTRATOR SHALL FURNISH MATERIALS, LABOR, EQUIPMENT AND SUPERVISION FOR THE CONSTRUCTION OF THE PROPOSED 80' LONG PRE-FABRICATED BRIDGE SUPPORTED ON MSE WALL ABUTMENTS IN ACCORDANCE WITH THE REQUIRMENTS OUTLINED IN THE ATTACHED MANUFACTURE'S INSTALLATION MANUALS AND IN ACCEPTABLE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN.

THE PRICE AND PAYMENT PROCEDURES SHALL BE IN CONFORMANCE WITH ALL APPLICABLE CALFIRE BID AND CONTRACT REQUIREMENTS.

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA SAFETY STANDARDS, STATE AND LOCAL BUILDING CODES AND MANUFACTURE'S REQUIRMENTS.

THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SAFE EXCAVATIONS AND EMBANKMENTS ARE MAINTAINED THROUGHOUT THE COURSE OF THE PROJECT.

PRIOR TO CONSTRUCTION, THE CONTRACTOR AND PROJECT ENGINEER SHALL EXAMINE THE AREA IN WHICH THE CROSSING IS TO BE CONSTRUCTED TO EVALUATE COMPLIANCE WITH THE REQUIREMENTS FOR INSTALLATION TOLERANCES, WORKER SAFETY AND ANY SITE CONDITIONS AFFECTING PERFORMANCE OF THE COMPLETED STRUCTURE. INSTALLATION SHALL PROCEED ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

ALL WORK SHALL BE INSPECTED BY THE PROJECT ENGINEER, OR DESIGNEE.

FERENCE SPECIFICATIONS

WHERE THE SPECIFICATION AND REFERENCE DOCUMENTS CONFLICT, THE PROJECT ENGINEER, OR DESIGNATED REPRESENTATIVE, WILL MAKE THE FINAL DETERMINATION OF THE APPLICABLE DOCUMENT.

REFERENCE STANDARDS INCLUDE:

- ASSHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014
- FHWA-NHI-10-024 VOLUME I AND GEC 11 DESIGN OF MECHNICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES
- FHWA-NHI-10-025 VOLUME II AND GEC 11 DESIGN OF MECHNICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES
- CALIFORNIA DEPARTMENT OF TRANSPORTAION, STANDARD SPECIFICATIONS, LATEST EDITION
- AASHTO STANDARD SPECIFICATIONS OR TRANSPORTATION MATERIALS AND METHOS OF SAMPLING AND TESTING, LATEST EDITION
- ASTM STANDARD TEST METHODS, LATEST EDITION

EXISTING UTILITIES:

THESE PLANS ARE NOT INTENDED TO ADDRESS EXISITING UTILITY LOCATIONS. CALL UTILITY LOCATING SERVICE FOR PRECISE UTILITY ALERT LOCATIONS BEFORE BEGINNING ANY WORK.

REMOVAL OF WATER

THE CONTRACTOR SHALL DEVELOP PROVIDE AND MAINTAIN AT ALL TIMES DURING CONSTRUCTION AMPLE MEANS AND DEVICES TO PROPERLY REMOVE AND DISPOSE OF ALL WATER FROM DEWATERING OPERATIONS IN A LEGAL AND REASONABLE MANNER.

STORM WATER POLUTION PREVENTION PLAN (SWPPP):

IF NOT OTHERWISE COVERED AS PART OF A SIGNED TIMBER HARVEST PLAN THAT OUTLINES BMPS COVERING STORM WATER POLUTION, THE CONTRACTOR SHALL SUBMIT A SWPPP FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. THE SWPPP SHALL BE SIGNED BY A QUALIFIED SWPPP DEVELOPER. THE CONTRACTOR IS RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT, INSPECTION, MAINTENANCE, AND RECORD RESPONSIBLE FOR THE SWPPP DEVELOPMENT.

NOTES

- 1. ENGINEERED FILL WHERE FILL IS TO BE PLACED BEHIND OR ABOVE THE REINFORCED SOIL ZONE, IT SHALL CONSIST OF SOIL AND/OR SOIL-AGGREGATE MIXTURES GENERALLY LESS THAN 4 INCHES IN MAXIMUM DIMENSION, FREE OF VISIBLE ORGANIC OR OTHER DELETERIOUS DEBRIS, AND HAVE A LOW PLASTICITY (PI <6).

 TYPICALLY, WELL-GRADED MIXTURES OF GRAVEL, SAND, NON-PLASTIC SILT, AND SMALL QUANTITIES (LESS THAN 15 PERCENT) OF CLAY ARE ACCEPTABLE FOR USE AS ENGINEERED FILL (SEE TABLE 3-2, FHWA NHI-10-024). ENGINEERED FILL SHALL BE UNIFORMLY MOISTURE-CONDITIONED TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT, PLACED IN HORIZONTAL LIFTS LESS THAN 8 INCHES IN LOOSE THICKNESS, AND COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION DETERMINED IN ACCORDANCE WITH AASHTO T180.
- 2. REINFORCED SOIL MATERIAL USED AS REINFORCED BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE DRAINAGE AGGREGATE COMPOSED OF DURABLE CRUSHED STONE CONFORMING TO NO. 57 SIZE PER ASTM C33 WITH THE FOLLOWING PARTICLE-SIZE DISTRIBUTION REQUIREMENTS PER ASTM D422. DRAINAGE AGGREGATE SHALL BE INSTALLED AND COMPACTED IN LIFTS NOT TO EXCEED 8" THICK. COMPACTIVE EFFORT WITHIN 3' OF THE BACK OF THE PRECAST MODULAR BLOCKS SHOULD BE ACCOMPLISHED WITH WALK-BEHIND COMPACTORS. HEAVY EQUIPMENT SHOULD NOT BE OPERATED WITHIN 3' OF THE BACK OF THE PRECAST MODULAR BLOCKS. THE REINFORCED SOIL SHALL EXTEND A MINIMUM OF 1' BEYOND THE EMBEDED END OF THE GEOGRID REINFORCEMENT LAYERS.

U.S. Standard	
Sieve Size	% Passing
1-½" (38 mm)	100
1" (25 mm)	95-100
½" (13 mm)	25-60
No. 4 (4.76 mm)	0-10
No 9 (2 29 mm)	0.5

- NONWOVEN GEOTEXTILE FABRIC (MIRAFI 140N, OR EQUALIVENT) SHALL BE PLACED AS INDICATED ON THE PLANS TO ENCAPSULATE THE REINFORCED DRAINAGE
 AGGREGATE. ADDITIONALLY, THE NONWOVEN GEOTEXTILE FABRIC SHALL BE PLACED IN THE V-SHAPED JOINT BETWEEN ADJACENT BLOCK UNITS ON THE SAME
 COURSE. THE NONWOVEN GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF CLASS 3 CONSTRUCTION SURVIVABILITY IN ACCORDANCE WITH AASHTO M
 288. ADJOINING SECTIONS OF FACBIC SHALL BE OVERLAPPED BY A MINIMUM OF 12".
- 4. BEDDING MATERIAL CHRUSHED STONE CONFORMING TO CALTRANS CLASS 2 AGGREGATE BASE ARE EXCEPTABLE BEDDING MATERIALS. BEDDING MATERIAL SHALL BE UNIFORMLY MOISTURE-CONDITIONED TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT, PLACED IN HORIZONTAL LIFTS LESS THAN 8 INCHES IN LOOSE THICKNESS, AND COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION DETERMINED IN ACCORDANCE WITH AASHTO T180.
- 5. RIP RAP SCOUR PROTECTION COMPETENT, ANGULAR, WELL-GRADED ROCK WITH A MEAN STONE SIZE (D50) OF 28" IN DIAMETER (EQUVALENT TO CALTRANS 1/2 TON CLASS ROCK SLOPE PROTECTION). MUST EXTEND INTO CHANNEL (AS SHOWN ON PLAN DRAWINGS) AND A MINIMUM OF 10' UPSTREAM AND DOWNSTREAM OF ABUTMENT WALLS BELOW THE Q100 WATER SURFACE LINE. SHALL BE NO LESS THAN 28" DEEP.
- 6. MODULAR BLOCK WALL COMPOSED OF REDI-ROCK 28" POSITIVE CONNECTION (PC) BLOCK WITH ~ 0 DEGREE BATTER. BLOCK SHALL BE INSTALLED PERSUANT TO THE MANUFACTURE'S RECOMMENDATIONS. TECHNICAL INFORMATION DEMONSTRATING CONFORMACE WITH THE REQUIREMENTS OF THIS SPECIFICATION FOR AN ALTERNATIVE PRECAST MODULAR BLOCK RETAINING WALL SYSTEM MUST BE SUBMITTED AND APPROVED BY THE PROJECT ENGINEER.
- 7. PRE-FABRICATED BRIDGE 16' WIDE X 80' LONG CAPABLE OF SUPPORTING AASHTO HL93 TRAFFIC LOADS. THE BRIDGE SHALL BE INSTALLED PERSUANT TO THE MANUFACTURE'S RECOMMENDATIONS.
- 8. REINFORCING GEOGRID GEOGRID REINFORCEMENT SHALL BE A WOVEN OR KNITTED PVC COATED GEOGRID MANUFACTURED FROM HIGH-TENACITY PET POLYESTER FIBER WITH AN AVERAGE MOLECULAR WEIGHT GREATER THAN 25,000 (M_N > 25,0000) AND A CARBOXYL END GROUP LESS THAN 30 (CEG < 30). THE GEOGRID SHALL BE FURNISHED IN PREFABRICATED ROLL WIDTHS OF CERTIFIED TENSILE STRENGTH BY THE MANUFACTURER. THE PREFABRICATED ROLL WIDTH OF THE GEOGRID SHALL BE 12", +/- 1/2". NO CUTTING OF GEOGRID REINFORCEMENT DOWN TO THE 12" ROLL WIDTH FROM A LARGER COMMERCIAL ROLL WIDTH WILL BE ALLOWED UNDER ANY CIRCUMSTANCES. APPROVED GEOGRID INCLUDES MIRAGRID 24XT GEOGRID, AS MANUFACTURED BY TENCATE GEOSYNTHETICS OF PENDERGRASS, GEORGIA USA AND DISTRIBUTED BY MANUFACTURERS OF THE REDI-ROCK RETAINING WALL SYSTEM.
- 9. AGGERATE SUBBASE AGGREGATE SUBBASE BENEATH THE MSE REINFORCED ZONE (IF NEEDED) SHALL CONFORM TO CALTRANS CLASS 1 AGGREGATE SUBBASE. IT SHALL BE UNIFORMLY MOISTURE-CONDITIONED TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT, PLACED IN HORIZONTAL LIFTS LESS THAN 8 INCHES IN LOOSE THICKNESS, AND COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION DETERMINED IN ACCORDANCE WITH AASHTO T180.
- 10. GEOTEXTILE WRAPPED APPROACHES GEOTEXTILE MUST COMPLY WITH CALTRANS CLASS B1 SUBGRADE ENHANCMENT GEOTEXTILE.



DO NOT SCALE DIMENSIONS FROM THESE PLANS. FIGURES OR WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. IT IS INTENDED THAT THE DRAWINGS, DETAILS AND SPECIFICATIONS SHOULD AGREE. SHOULD ANY DISCREPANCY OR APPARENT ERROR OCCUR, THE CONTRACTOR SHALL NOTIFY THE STATE REPRESENTATIVE AT ONCE. UPON DISCOVERY OF CONFLICTS OR ERRORS, THE STATE'S REPRESENTATIVE SHALL SEEK GUIDANCE FROM THE DESIGNER OF RECORD TO RESOLVE THE PROBLEM AND WHOSE DECISION SHALL BE FINAL. APPROVAL OF THIS PLAN DOES NOT AUTHORIZE OR APPROVE ANY OMISSION OR DEVIATION FROM THE APPLICABLE REGULATIONS. FINAL APPROVAL IS SUBJECT TO FIELD INSPECTION. ONE SET OF APPROVED PLANS AND SPECIFICATIONS SHALL BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.

PROJECT TITLE:

SOQUEL CREEK CROSSING 80' BRIDGE, CROSSING LR1

SOQUEL DEMONSTRATION STATE FOREST



MBER:

DESIGNED BY: D. LINDSAY

DRAWN BY: D. LINDSAY

REVIEWED BY:

FILE DATE:

SHEET TITLE:

| | Project overview

AND NOTES

SHEET NUMBER

1 OF 3 SHEETS

OT NATE.